

Amendment Under 37 C.F.R. § 1.111
Serial No. 09/674,643
Our Ref: Q61622

resilient link means connecting the sleeve to the base, said resilient link means enabling the sleeve to slide along the needle, the needle passing through the bore of the sleeve via the first outlet thereof, said sleeve being suitable for taking up two extreme positions:

a first sleeve position in which the sleeve surrounds the sharp end of the needle, said sharp end being situated at a given distance from the second outlet of the through bore; and

a second sleeve position in which the face of the sleeve that includes the first outlet of the through bore is positioned adjacent to the base; said resilient link means comprising at least:

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a first link having first and second ends, said link being of a length " L_1 " defined between said two ends;

first resilient return hinge means for connecting the first end of the first link to the sleeve, said first hinge means being organized so that said first link takes up a defined equilibrium position on a direction that makes an acute angle (α) with the axis of the through bore;

a first crank arm, said first crank arm being defined between first and second ends, said crank arm being of a length " l_1 " defined between its two ends the length " l_1 " of the first crank arm being no greater than the length " L_1 " of the first link; and

first means for mounting each of said first and second ends of the first crank arm to pivot freely respectively on the second end of the first link and on the base means,

wherein said device further comprises:

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a first channel portion made in the sleeve and intersecting the through bore in a portion lying between its second outlet and the sharp end of the needle when the sleeve is in the first sleeve position;

a shutter slidably mounted in the first channel portion, said shutter being suitable for taking up a first shutter position and a second shutter position, the first shutter position being one in which it is not situated in the through bore, and

means for applying thrust on said shutter when the sleeve comes close to the base on passing from the first shutter position to the second shutter position.

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Claim 16 (Twice Amended). - A device according to claim 15, wherein the means for applying thrust on said shutter when the sleeve comes close to the base on passing from the first sleeve position to the second sleeve position are constituted by:

a second channel portion made in the sleeve in continuity with the first channel portion and opening out via an outlet orifice in the same face of the sleeve as has the first outlet of the through bore;

a flexible rod preformed into an arcuate bow shape and slidably mounted in said second channel portion in such a manner that a first end thereof is associated with the shutter, and a second end thereof emerges from the outlet orifice of the second channel portion by an amount that is not less than the distance the shutter needs to travel in order to pass from the first shutter position to the second shutter position; and

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a release cavity adjacent the second channel portion and in communication with said second channel portion, the release cavity being designed so that, when the shutter is held in the first shutter position, the flexible rod can deform in bending to penetrate laterally into said release cavity when the face of the sleeve having the first outlet of the through bore comes close to the base.

Claim 18 (Twice Amended). A device according to claim 17, wherein the means [(227)] for locking the position of the second end of the flexible rod when it is retracted into the second channel portion is constituted by at least one barb secured to the flexible rod and a housing complementary to the barb formed in a wall of the second channel portion.

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Claim 19 (Twice Amended). A device according to claim 16 , wherein the first channel portion has at least a first part and a second part formed on either side of the through bore, the first part of the first channel portion being in line with the second channel portion, the shutter being contained completely within said first part of the first channel portion when the shutter is in the first shutter position, and by the fact that the device further includes a substantially U-shaped fork secured to the shutter and having two limbs, the two limbs of the fork being spaced apart from each other by a distance of not less than the diameter of the needle, said fork being shaped in such a manner that when the shutter is in the first shutter position, the space defined between the two limbs thereof is situated on the axis of the through bore and the two limbs extend at least in part into the second part of the first channel portion.

Claim 23 (Twice Amended). A device according to claim 1, wherein the base means comprises two first and second rings, the first ring receiving the base end of the needle, and means for connecting said two rings between them by weak points.

B³ Claim 24 (Twice Amended) A device according to claim 23, wherein the two rings respectively include two openings, the two openings being realized to form, when the two rings are connected between them, a female part of a male-female jointing able to cooperate with the complementary male part constituted by an end-part of a syringe, the total depth of these two openings, when the two rings are connected between them, being lower than the height of the end-part of the syringe.

Claim 25 (Twice Amended). A device according to claim 23, further including a not-withdrawal ring located on a wall of said second ring.

B⁴ Claim 31 (Amended). A device according to claim 1, wherein the length "L1" of the link and the length "I1" of the crank arm are determined in such a manner than the sum $L1+I1$ and the sum $L1+I1+M$, where "M" represents the length of the sleeve, bracket the length "A" of the needle to be protected as measured between the sharp end and the base end.
